

What we claim:

1. A disk device comprising:

a disk controller comprising a channel adapter, a cache memory, and a disk adapter; and

5 a disk array comprising disk drives, each being equipped with a plurality of I/O ports,

wherein said disk adapter and said disk array are connected via a switch, and

10 wherein a destination drive I/O port to which a frame is to be forwarded is determined, according to the type of a command included in an exchange that is transferred between said disk adapter and one of said disk drives.

15 2. A disk device according to claim 1, wherein the destination drive port to which said frame is to be forwarded is determined, depending on whether the type of the command is a data read command or a data write command.

20 3. A disk device according to claim 2, wherein said exchange for reading data and said exchange for writing data are executed in parallel.

25 4. A disk device comprising:

a disk controller comprising a channel adapter, a cache memory, and a disk adapter; and

a disk array comprising disk drives, each being

equipped with a plurality of I/O ports,

wherein said disk adapter and said disk array are connected via a switch, and

wherein a path which a frame passes to be transferred between said switch and one of said disk drives is determined, according to the type of a command included in an exchange between said disk adapter and the one of said disk drives.

10 5. A disk device according to claim 4, wherein the path which said frame passes between said switch and the one of said disk drives is determined, depending on whether the type of the command is a data read command or a data write command.

15 6. A disk device comprising:

a disk controller comprising a channel adapter, a cache memory, and a disk adapter; and

20 a disk array comprising disk drives, each being equipped with a plurality of I/O ports,

wherein said disk adapter and said disk array are connected via a switch,

25 wherein said disk adapter determines destination information within a frame to be transferred from said disk adapter to one of said disk drives, according the type of a command included in an exchange between said disk adapter and the one of said disk drives, and

wherein said switch selects one of port to port

connection paths between a port to which said disk adapter is connected and ports to which the disk drives constituting said disk array are connected to switch each frame inputted to the switch, according to the
5 destination information within the frame.

7. A disk device comprising:

a disk controller comprising a channel adapter, a cache memory, and a disk adapter; and

10 a disk array comprising disk drives, each being equipped with a plurality of I/O ports,

wherein said disk adapter and said disk array are connected via a switch,

15 wherein a destination drive port to which a frame is to be forwarded is determined, depending on whether the type of a command included in an exchange that is transferred between said disk adapter and one of said disk drives is a data read command or a data write command, and

20 wherein said exchange for reading data and said exchange for writing data are executed in parallel.

8. A disk device comprising:

a disk controller comprising a channel adapter, a cache memory, and a disk adapter; and

25 a disk array comprising disk drives, each being equipped with a plurality of I/O ports,

wherein said disk adapter and said disk array are

connected via a switch, and

wherein a path which a frame passes between said switch and one of said disk drives is determined, depending on whether the type of a command included in
5 an exchange between said disk adapter and the one of said disk drives is a data read command or a data write command.

9. A disk device comprising:

10 a disk controller comprising a channel adapter, a cache memory, and a disk adapter;

a plurality of disk drives, each being equipped with a plurality of I/O ports; and

15 a switch connecting said disk controller and said plurality of disk drives,

wherein a destination drive port to which a frame is to be forwarded is determined, depending on whether the type of a command included in an exchange that is transferred between said disk adapter and one of said
20 disk drives is a data read command or a data write command, and

wherein said exchange for reading data and said exchange for writing data are executed in parallel.